WHAT IS CLAIMED IS:

1. A device for determining corrected intraocular pressure comprising:

a corneal pachymeter;

a microprocessor which automatically receives corneal thickness data from said pachymeter;

an input device for receiving a tonometer reading from a separate tonometer;

said microprocessor configured to execute at least one algorithm for modifying said tonometer reading based on the corneal thickness data to produce a corrected intraocular pressure value; and,

a display for displaying the corrected intraocular pressure value.

2. A device according to claim 1 wherein the pachymeter comprises

a pulse generator;

an ultrasonic transducer connected to generate an ultrasonic pulse in response to a pulse from the pulse generator; and,

a circuit for detecting reflected ultrasonic signals reflected at a back side of the cornea, amplifying the detected reflected ultrasonic signals and measuring a time between the generation of the ultrasonic pulse and the detection of the reflected ultrasonic signals.

3. A device according to claim 2 wherein the circuit comprises a timing circuit comprising:

a capacitor;

a charging circuit connected to charge the capacitor at a rate which decreases with time;

a trigger circuit connected to cause the charging circuit to commence charging the capacitor from an initial state of charge when the pulse is delivered by the pulse generator;

a digital to analog converter connected to measure a voltage across the capacitor as of a time at which the reflected signals are detected.

4. A device according to claim 3 wherein the charging circuit comprises an electrical resistance connecting the capacitor to a source of a constant voltage.

5. A device according to any one of claims 1 to 4 wherein the microprocessor has access to a plurality of algorithms for IOP correction which may be selected by the operator.

6. A device according to any one of claims 1 to 5 wherein the at least one algorithm generates a corrected IOP based upon at least corneal thickness and one or more tonometer reading values.

7. A device according to claim 4 wherein the at least one algorithm involves computing a linear combination of the corneal thickness and one or more tonometer reading values.

8. A device according to claim 7 wherein the at least one algorithm comprises a lookup table accessible to the microprocessor.

9. A device according to claim 1 comprising means for setting parameters of the at least one algorithm by way of the input device.

10. A device according to any one of claims 1 to 9 comprising at least one stored set of a plurality of predetermined locations for taking a set of pachymeter measurements wherein the display is configured to display a graphical representation of an eye marked with indicia

to graphically indicate one of the predetermined locations at which a next pachymeter measurement of the set ought to be taken.

11. A device according to claim 10 wherein upon obtaining the next pachymeter measurement the display is automatically configured to cause the indicia to graphically indicate another one of the predetermined locations.

12. A device for measuring thickness of a layer, the device comprising:

a transmitting transducer connected to transmit an ultrasonic pulse into a layer to be measured;

a receiving transducer connected to detect the ultrasonic pulse after the ultrasonic pulse has been reflected from a back side of the layer;

a timing circuit comprising:

a capacitor;

a charging circuit connected to charge the capacitor at a rate which decreases with time;

a trigger circuit connected to cause the charging circuit to commence charging the capacitor from an initial state of charge when an ultrasonic pulse is transmitted into the layer by the ultrasonic transducer;

a digital to analog converter connected to measure a voltage across the capacitor as of a time at which the reflected ultrasonic pulse is detected at the receiving transducer.

13. Apparatus according to claim 12 wherein one transducer serves both as the receiving transducer and the transmitting transducer.

14. A pachymeter comprising a display and at least one stored set of a plurality of predetermined locations for taking a set of pachymeter

measurements wherein the display is configured to display a graphical representation of an eye marked with indicia to graphically indicate one of the predetermined locations at which a next pachymeter measurement of the set ought to be taken.

15. A pachymeter according to claim 14 comprising means for automatically updating the display to cause the indicia to graphically indicate another one of the predetermined locations in response to a measurement being completed.